



1

## SEQUENCE LISTING

<110> BAUMANN, PETER  
CECH, THOMAS R.

<120> PROTECTION-OF-TELOMERE-1 (POT-1) PROTEIN AND ENCODING  
POLYNUCLEOTIDES

<130> 089491/0201

<140> 09/816,248

<141> 2001-03-26

<160> 45

<170> PatentIn Ver. 2.1

<210> 1

<211> 118

<212> PRT

<213> Euplotes crassus

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Cys	Lys	Val	Ala	Asp	Pro	Ser	Ser	Val	Ala	Lys	Gly	Gly	Lys	Leu	Asn
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Thr	Val	Asn	Val	Val	Phe	Phe	Ser	Gln	Asn	Phe	Glu	Asp	Leu	Pro	Ile
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Asp Ala Thr Phe Pro Tyr Lys Thr Asn Gln Glu Arg Tyr Ile Cys Ser  
35 40 45

Leu Lys Val Val Asp Pro Ser Leu Tyr Leu Lys Ser Gln Lys Gly Thr  
50 55 60

Gly Asp Ala Ser Asp Tyr Ala Thr Leu Val Leu Tyr Ala Lys Arg Phe  
65 70 75 80

Glu Asp Leu Pro Ile Ile His Arg Ile Gly Asp Ile Ile Arg Val His  
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Arg Ala Thr Leu Arg Leu Tyr Asn Gly Gln Arg Gln Phe Asn Ala Asn  
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Leu Lys Ile Val Asp Pro Ser Leu Tyr Leu Lys Lys Glu Lys Gly Thr  
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Gly Asp Asn Ser Asp Tyr Ala Thr Leu Val Leu Tyr Ala Lys Arg Phe  
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Glu Asp Leu Pro Ile Ile His Arg Leu Gly Asp Ile Ile Arg Ile His  
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 Leu Lys Ile Val Asp Pro Thr Leu Tyr Leu Lys Gln Gln Lys Gly Ala  
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 Gly Asp Ala Ser Asp Tyr Ala Thr Leu Val Leu Tyr Ala Lys Arg Phe  
 65 70 75 80  
 Glu Asp Leu Pro Ile Ile His Arg Ala Gly Asp Ile Ile Arg Val His  
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&lt;210&gt; 5

&lt;211&gt; 109

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 5

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 Lys Pro Pro Tyr Leu Ser Lys Gly Thr Asp Tyr Cys Ser Val Val Thr  
 35 40 45  
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&lt;210&gt; 6

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; Schizosaccharomyces pombe

&lt;400&gt; 6

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Thr Pro Ser Arg Gln Ser Leu His Gly Thr Lys Asp Trp Val Thr Thr  
 35 40 45

Val Tyr Leu Trp Asp Pro Thr Cys Asp Thr Ser Ser Ile Gly Leu Gln  
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Ile His Leu Phe Ser Lys Gln Gly Asn Asp Leu Pro Val Ile Lys Gln  
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Val Gly Gln Pro Leu Leu Leu His Gln Ile Thr Leu Arg Ser Tyr Arg  
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Pro Asp Phe Ser  
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&lt;212&gt; DNA

&lt;213&gt; Schizosaccharomyces pombe

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<212> DNA

<213> Schizosaccharomyces pombe

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<210> 9

<211> 555

<212> PRT

<213> Schizosaccharomyces pombe

<400> 9

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      20                      25                     30

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Val Lys Asp Phe Thr Pro Ser Arg Gln Ser Leu His Gly Thr Lys Asp
      50                      55                     60

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      85                      90                     95

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Val Ile Lys Gln Val Gly Gln Pro Leu Leu Leu His Gln Ile Thr Leu
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Arg Ser Tyr Arg Asp Arg Thr Gln Gly Leu Ser Lys Asp Gln Phe Arg
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 165 170 175  
 Lys Asn Gly Glu Leu Leu Ser Thr Ser Ser Ala Arg Gln Asn Gln Thr  
 180 185 190  
 Gly Leu Ser Tyr Pro Ser Val Ser Phe Ser Leu Leu Ser Gln Ile Thr  
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 Pro His Gln Arg Cys Ser Phe Tyr Ala Gln Val Ile Lys Thr Trp Tyr  
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 225 230 235 240  
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 Pro Phe Gly Arg Phe Ser Ile Arg Cys Ile Leu Trp Asp Glu His Asp  
 260 265 270  
 Phe Tyr Cys Arg Asn Tyr Ile Lys Glu Gly Asp Tyr Val Val Met Lys  
 275 280 285  
 Asn Val Arg Thr Lys Ile Asp His Leu Gly Tyr Leu Glu Cys Ile Leu  
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 His Gly Asp Ser Ala Lys Arg Tyr Asn Met Ser Ile Glu Lys Val Asp  
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 Ser Glu Glu Pro Glu Leu Asn Glu Ile Lys Ser Arg Lys Arg Leu Tyr  
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 Val Gln Asn Cys Gln Asn Gly Ile Glu Ala Val Ile Glu Lys Leu Ser  
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 Gln Ser Gln Gln Ser Glu Asn Pro Phe Ile Ala His Glu Leu Lys Gln  
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 405 410 415  
 Trp Pro Lys Ser Leu Thr Gln Phe Ala Val Leu Ser Gln Pro Pro Ser  
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Ser Tyr Val Trp Met Phe Ala Leu Leu Val Arg Asp Val Ser Asn Val  
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 Thr Leu Pro Val Ile Phe Phe Asp Ser Asp Ala Ala Glu Leu Ile Asn  
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 Ser Ser Lys Ile Gln Pro Cys Asn Leu Ala Asp His Pro Gln Met Thr  
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 Arg Ile Gln His His Ile Ser Lys Gly Glu Ser Pro Thr Leu Ala Ala  
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&lt;210&gt; 10

&lt;211&gt; 1740

&lt;212&gt; DNA

&lt;213&gt; Schizosaccharomyces pombe

&lt;400&gt; 10

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           50                  55                  60  
 Met Leu Ala Tyr His Gly Gly Asn Tyr Thr Phe Tyr Phe Ser Ser Gln  
           65                  70                  75                  80  
 Glu Leu Ile Ile Met Phe Leu Asp Trp Val Thr Thr Val Tyr Leu Trp  
                   85                  90                  95  
 Asp Pro Thr Cys Asp Thr Ser Ser Ile Gly Leu Gln Ile His Leu Phe  
                   100                  105                  110  
 Ser Lys Gln Gly Asn Asp Leu Pro Val Ile Lys Gln Val Gly Gln Pro  
           115                  120                  125  
 Leu Leu Leu His Gln Ile Thr Leu Arg Ser Tyr Arg Asp Arg Thr Gln  
           130                  135                  140  
 Gly Leu Ser Lys Asp Gln Phe Arg Tyr Ala Leu Trp Pro Asp Phe Ser  
           145                  150                  155                  160  
 Ser Asn Ser Lys Asp Thr Leu Cys Pro Gln Pro Met Pro Arg Leu Met  
                   165                  170                  175  
 Lys Thr Gly Asp Lys Glu Glu Gln Phe Ala Leu Leu Leu Asn Lys Ile  
                   180                  185                  190  
 Trp Asp Glu Gln Thr Asn Lys His Lys Asn Gly Glu Leu Leu Ser Thr  
           195                  200                  205  
 Ser Ser Ala Arg Gln Asn Gln Thr Gly Leu Ser Tyr Pro Ser Val Ser  
           210                  215                  220  
 Phe Ser Leu Leu Ser Gln Ile Thr Pro His Gln Arg Cys Ser Phe Tyr  
           225                  230                  235                  240  
 Ala Gln Val Ile Lys Thr Trp Tyr Ser Asp Lys Asn Phe Thr Leu Tyr  
                   245                  250                  255



His Gln Ser Leu Thr Phe Leu Gln Lys Arg Trp Arg Gly Phe Gly Thr  
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Lys Ile Val

<210> 12  
 <211> 1905  
 <212> DNA  
 <213> Homo sapiens

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 <212> PRT  
 <213> Homo sapiens

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Lys Pro Pro Tyr Leu Ser Lys Gly Thr Asp Tyr Cys Ser Val Val Thr  
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 Ile Val Asp Gln Thr Asn Val Lys Leu Thr Cys Leu Leu Phe Ser Gly  
           50                  55                  60  
 Asn Tyr Glu Ala Leu Pro Ile Ile Tyr Lys Asn Gly Asp Ile Val Arg  
   65                  70                  75                  80  
 Phe His Arg Leu Lys Ile Gln Val Tyr Lys Lys Glu Thr Gln Gly Ile  
                   85                  90                  95  
 Thr Ser Ser Gly Phe Ala Ser Leu Thr Phe Glu Gly Thr Leu Gly Ala  
                  100                 105                 110  
 Pro Ile Ile Pro Arg Thr Ser Ser Lys Tyr Phe Asn Phe Thr Thr Glu  
          115                 120                 125  
 Asp His Lys Met Val Glu Ala Leu Arg Val Trp Ala Ser Thr His Met  
   130                 135                 140  
 Ser Pro Ser Trp Thr Leu Leu Lys Leu Cys Asp Val Gln Pro Met Gln  
  145                 150                 155                 160  
 Tyr Phe Asp Leu Thr Cys Gln Leu Leu Gly Lys Ala Glu Val Asp Gly  
          165                 170                 175  
 Ala Ser Phe Leu Leu Lys Val Trp Asp Gly Thr Arg Thr Pro Phe Pro  
          180                 185                 190  
 Ser Trp Arg Val Leu Ile Gln Asp Leu Val Leu Glu Gly Asp Leu Ser  
   195                 200                 205  
 His Ile His Arg Leu Gln Asn Leu Thr Ile Asp Ile Leu Val Tyr Asp  
   210                 215                 220  
 Asn His Val His Val Ala Arg Ser Leu Lys Val Gly Ser Phe Leu Arg  
  225                 230                 235                 240  
 Ile Tyr Ser Leu His Thr Lys Leu Gln Ser Met Asn Ser Glu Asn Gln  
          245                 250                 255  
 Thr Met Leu Ser Leu Glu Phe His Leu His Gly Gly Thr Ser Tyr Gly  
          260                 265                 270  
 Arg Gly Ile Arg Val Leu Pro Glu Ser Asn Ser Asp Val Asp Gln Leu  
          275                 280                 285  
 Lys Lys Asp Leu Glu Ser Ala Asn Leu Thr Ala Asn Gln His Ser Asp  
   290                 295                 300  
 Val Ile Cys Gln Ser Glu Pro Asp Asp Ser Phe Pro Ser Ser Gly Ser  
  305                 310                 315                 320  
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 355 360 365  
 Tyr Lys Pro Arg Arg Leu Phe Gln Ser Val Lys Leu His Cys Pro Lys  
 370 375 380  
 Cys His Leu Leu Gln Glu Val Pro His Glu Gly Asp Leu Asp Ile Ile  
 385 390 395 400  
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 405 410 415  
 Ser Leu Tyr Asp Ser Lys Ile Trp Thr Thr Lys Asn Gln Lys Gly Arg  
 420 425 430  
 Lys Val Ala Val His Phe Val Lys Asn Asn Gly Ile Leu Pro Leu Ser  
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 450 455 460  
 Lys Leu Ser Asn Lys Phe Asn Ser Val Ile Pro Val Arg Ser Gly His  
 465 470 475 480  
 Glu Asp Leu Glu Leu Leu Asp Leu Ser Ala Pro Phe Leu Ile Gln Gly  
 485 490 495  
 Thr Ile His His Tyr Gly Cys Lys Gln Cys Ser Ser Leu Arg Ser Ile  
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 Thr Phe Thr Leu Asp Asp Gly Thr Gly Val Leu Glu Ala Tyr Leu Met  
 545 550 555 560  
 Asp Ser Asp Lys Phe Phe Gln Ile Pro Ala Ser Glu Val Leu Met Asp  
 565 570 575  
 Asp Asp Leu Gln Lys Ser Val Asp Met Ile Met Asp Met Phe Cys Pro  
 580 585 590  
 Pro Gly Ile Lys Ile Asp Ala Tyr Pro Trp Leu Glu Cys Phe Ile Lys  
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 <213> Homo sapiens

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 <212> PRT  
 <213> Homo sapiens

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 Lys Pro Pro Tyr Leu Ser Lys Gly Thr Asp Tyr Cys Ser Val Val Thr  
 35 40 45  
 Ile Val Asp Gln Thr Asn Val Lys Leu Thr Cys Leu Leu Phe Ser Gly  
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 Asn Tyr Glu Ala Leu Pro Ile Ile Tyr Lys Asn Gly Asp Ile Val Arg  
 65 70 75 80  
 Phe His Arg Leu Lys Ile Gln Val Tyr Lys Lys Glu Thr Gln Gly Ile  
 85 90 95  
 Thr Ser Ser Gly Phe Ala Ser Leu Thr Phe Glu Gly Thr Leu Gly Ala  
 100 105 110

Pro Ile Ile Pro Arg Thr Ser Ser Lys Tyr Phe Asn Phe Thr Thr Glu  
 115 120 125  
 Asp His Lys Met Val Glu Ala Leu Arg Val Trp Ala Ser Thr His Met  
 130 135 140  
 Ser Pro Ser Trp Thr Leu Leu Lys Leu Cys Asp Val Gln Pro Met Gln  
 145 150 155 160  
 Tyr Phe Asp Leu Thr Cys Gln Leu Leu Gly Lys Ala Glu Val Asp Gly  
 165 170 175  
 Ala Ser Phe Leu Leu Lys Val Trp Asp Gly Thr Arg Thr Pro Phe Pro  
 180 185 190  
 Ser Trp Arg Val Leu Ile Gln Asp Leu Val Leu Glu Gly Asp Leu Ser  
 195 200 205  
 His Ile His Arg Leu Gln Asn Leu Thr Ile Asp Ile Leu Val Tyr Asp  
 210 215 220  
 Asn His Val His Val Ala Arg Ser Leu Lys Val Gly Ser Phe Leu Arg  
 225 230 235 240  
 Ile Tyr Ser Leu His Thr Lys Leu Gln Ser Met Asn Ser Glu Asn Gln  
 245 250 255  
 Thr Met Leu Ser Leu Glu Phe His Leu His Gly Gly Thr Ser Tyr Gly  
 260 265 270  
 Arg Gly Ile Arg Val Leu Pro Glu Ser Asn Ser Asp Val Asp Gln Leu  
 275 280 285  
 Lys Lys Asp Leu Glu Ser Ala Asn Leu Thr Ala Asn Gln His Ser Asp  
 290 295 300  
 Val Ile Cys Gln Ser Glu Pro Asp Asp Ser Phe Pro Asn Gly Val Ser  
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 Ala Ser Thr Ser  
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&lt;210&gt; 16

&lt;211&gt; 1816

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 16

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&lt;210&gt; 17

&lt;211&gt; 518

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 17

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Leu Lys Gly Gly Thr Ile Val Asn Val Tyr Gly Val Val Lys Phe Phe
                20                      25                      30

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Lys Pro Pro Tyr Leu Ser Lys Gly Thr Asp Tyr Cys Ser Val Val Thr
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Ile Val Asp Gln Thr Asn Val Lys Leu Thr Cys Leu Leu Phe Ser Gly
    50                      55                      60

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Asn Tyr Glu Ala Leu Pro Ile Ile Tyr Lys Asn Gly Asp Ile Val Arg
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Phe His Arg Leu Lys Ile Gln Val Tyr Lys Lys Glu Thr Gln Gly Ile
                85                      90                      95

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Thr Ser Ser Gly Phe Ala Ser Leu Thr Phe Glu Gly Thr Leu Gly Ala
    100                      105                      110

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Pro Ile Ile Pro Arg Thr Ser Ser Lys Tyr Phe Asn Phe Thr Thr Glu
    115                      120                      125

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 Ser Pro Ser Trp Thr Leu Leu Lys Leu Cys Asp Val Gln Pro Met Gln  
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 Ala Ser Phe Leu Leu Lys Val Trp Asp Gly Thr Arg Thr Pro Phe Pro  
 180 185 190  
 Ser Trp Arg Val Leu Ile Gln Asp Leu Val Leu Glu Gly Asp Leu Ser  
 195 200 205  
 His Ile His Arg Leu Gln Asn Leu Thr Ile Asp Ile Leu Val Tyr Asp  
 210 215 220  
 Asn His Val His Val Ala Arg Ser Leu Lys Val Gly Ser Phe Leu Arg  
 225 230 235 240  
 Ile Tyr Ser Leu His Thr Lys Leu Gln Ser Met Asn Ser Glu Asn Gln  
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 Thr Met Leu Ser Leu Glu Phe His Leu His Gly Gly Thr Ser Tyr Gly  
 260 265 270  
 Arg Gly Ile Arg Val Leu Pro Glu Ser Asn Ser Asp Val Asp Gln Leu  
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 Lys Lys Asp Leu Glu Ser Ala Asn Leu Thr Ala Asn Gln His Ser Asp  
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 Val Ile Cys Gln Ser Glu Pro Asp Asp Ser Phe Pro Ser Ser Gly Ser  
 305 310 315 320  
 Val Ser Leu Tyr Glu Val Glu Arg Cys Gln Gln Leu Ser Ala Thr Ile  
 325 330 335  
 Leu Thr Asp His Gln Tyr Leu Glu Arg Thr Pro Leu Cys Ala Ile Leu  
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 Lys Gln Lys Ala Pro Gln Gln Tyr Arg Ile Arg Ala Lys Leu Arg Ser  
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 Tyr Lys Pro Arg Arg Leu Phe Gln Ser Val Lys Leu His Cys Pro Lys  
 370 375 380  
 Cys His Leu Leu Gln Glu Val Pro His Glu Gly Asp Leu Asp Ile Ile  
 385 390 395 400  
 Phe Gln Asp Gly Ala Thr Lys Thr Pro Asp Val Lys Leu Gln Asn Thr  
 405 410 415  
 Ser Leu Tyr Asp Ser Lys Ile Trp Thr Thr Lys Asn Gln Lys Gly Arg  
 420 425 430

Lys Val Ala Val His Phe Val Lys Asn Asn Gly Ile Leu Pro Leu Ser  
435 440 445

Asn Glu Cys Leu Leu Leu Ile Glu Gly Gly Thr Leu Ser Glu Ile Cys  
450 455 460

Lys Leu Ser Asn Lys Phe Asn Ser Val Ile Pro Val Arg Ser Gly His  
465 470 475 480

Glu Asp Leu Glu Leu Leu Asp Leu Ser Ala Pro Phe Leu Ile Gln Gly  
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Cys Tyr Asp Leu Tyr Thr  
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<211> 27377

<212> DNA

<213> Homo sapiens

<400> 18

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